



51SL^{Series} Portable Radio

700/800 VHF UHF

EFJohnson's 51SL Series Portable Radio is rugged, lightweight, versatile, and designed to operate in analog and digital applications. It provides a seamless evolution to next generation networks while offering investment protection for your present communications system; all in a powerful software-controlled device that is easy on your mind and your budget. If you need a multi-protocol portable radio that leads the industry in feature richness and system interoperability, then the 51SL Series Portable Radio is your clear product choice.



Project 25 Compliance

Supports Project 25 CAI (Common Air Interface), Project 25 Trunked and Conventional system protocols, and Project 25 Over-The-Air Rekeying (OTAR) functionality.

Industry's Only SMARTNET[®] II / SmartZone[®] Licensee

Industry's only supplier licensed to support both analog and digital SMARTNET II and SmartZone trunking protocols.

Numerous Encryption Protocols

Supports industry standard software encryption capabilities such as DES-OFB, and DES.



EFJohnson is a leading provider of Project 25 compliant two-way radios and communication systems for law enforcement, fire fighters, EMS, and military.

More Key Features and Benefits

Multiple Configuration Offerings

Includes a Model II (display, basic keypad) and a Model III (display, DTMF keypad) version that features an enhanced backlit display and backlit keypad for easier viewing and usage.

Significant Product Flexibility

Enables programming of up to 512 channel/talkgroups, supports both narrowband (12.5 kHz) and wideband (25 kHz) channel spacing, and multiple system protocols.

Simplified Feature Modifications and Updates

Easy radio programming and feature updating using EFJohnson's PC Configure[™] application.

Extensive Accessory Suite

Complete line of accessory products including speaker microphones, headsets, surveillance kits, batteries, chargers, carrying apparatus, and encryption "keyloading" devices.

Enhanced Product Robustness

Meets applicable Mil Standard 810C, D, E, and F specifications, as well as approved by Factory Mutual as intrinsically safe for use in hazardous environments.

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Typical Performance Specifications

GENERAL	700/800	VHF	UHF R1	UHF R2
Frequency Range	762–806 MHz 806–870 MHz	136–174 MHz	380–470 MHz	450–512 MHz
Channel Spacing	12.5 kHz, 25 kHz	12.5 kHz, 25 kHz	12.5 kHz, 25 kHz	12.5 kHz, 25 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
FCC Type Acceptance Certification	ATH2425171	ATH2425111	ATH2425131	ATH2425141
Industry Canada Type Certification	IC: 933B-2425171	IC: 933B-2425111	IC: 933B2425131	IC: 933B-2425141
FCC Emissions Designators	11K0F3E, 16K0F3E, 14K0F3E, 8K10F1E, 8K10F1D	16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D	16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D	16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D
Input Voltage	7.2 V			
Dimensions (w/o antenna) (HxWxD)	6.7" x 2.52" x 1.9" (6.4 cm x 17.0 cm x 4.8 cm)			
Weight (with standard battery)	24 oz. (675 g)			
Case	Polycarbonate—black, yellow, orange			
Temperature Range	–30°C to +60°C			

TRANSMITTER				
RF Power Output	2.5/1 W (700 MHz), 3/1 W (800 MHz)	5/1 W	4/1 W	4/1 W
Frequency Stability (–30°C to +60°C)	±1.5 ppm	±1.5 ppm	±1.5 ppm	±1.5 ppm
Modulation Limiting				
25 kHz channels	±5 kHz	±5 kHz	±5 kHz	±5 kHz
12.5 kHz channels	±2.5 kHz	±2.5 kHz	±2.5 kHz	±2.5 kHz
Emissions (Conducted/Radiated)	–75 dBc	–75 dBc	–75 dBc	–75 dBc
Audio Response	+1, –3dB	+1, –3dB	+1, –3dB	+1, –3dB
FM Hum and Noise				
25 kHz channels	–45 dB	–45 dB	–45 dB	–45 dB
12.5 kHz channels	–40 dB	–40 dB	–40 dB	–40 dB
Audio Distortion	2%	2%	2%	2%

RECEIVER				
Audio Output Power	500 mW	500 mW	500 mW	500 mW
Frequency Stability (–30°C to +60°C)	±1.5 ppm	±1.5 ppm	±1.5 ppm	±1.5 ppm
Sensitivity				
Analog Mode: 12 dB SINAD	0.25 uV (–119 dBm)	0.25 uV (–119 dBm)	0.25 uV (–119 dBm)	0.25 uV (–119 dBm)
Digital Mode: 5% BER	0.25 uV (–119 dBm)	0.25 uV (–119 dBm)	0.25 uV (–119 dBm)	0.25 uV (–119 dBm)
Selectivity				
25 kHz channels	–75 dB	–75 dB	–75 dB	–75 dB
12.5 kHz channels	–63 dB	–63 dB	–63 dB	–63 dB
Intermodulation	–75 dB	–78 dB	–77 dB	–77 dB
Spurious & Image Rejection	–75 dB	–75 dB	–75 dB	–75 dB
FM Hum and Noise				
25 kHz channels	–40 dB	–40 dB	–40 dB	–40 dB
12.5 kHz channels	–35 dB	–35 dB	–35 dB	–35 dB
Audio Distortion	2%	2%	2%	2%

All specifications are measured per TIA 102.CAAA, TIA 102.CAAB and per TIA 603 standards.

BATTERIES			
Battery Type	Dimensions (HxWxD)	Weight	Aprox. Life (5/5/90) (With Encryption/Without Encryption)
Extra-High Capacity NiMH	6.0" x 2.3" x 0.85"	0.81 lbs	12 hrs/13 hrs
Extra-High Capacity NiMH	FM 6.0" x 2.3" x 0.85"	0.81 lbs	12 hrs/13 hrs
Alkaline Battery Clamshell	7.2" x 2.6" x 2.0"	0.98 lbs (w/12 AA batt.)	14-16 hrs/16-18 hrs

ENVIRONMENTAL SPECIFICATIONS

Environment	Mil Spec 810C		Mil Spec 810D		Mil Spec 810E		Mil Spec 810F	
	M	P	M	P	M	P	M	P
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II
High Temp.	501.1	I	501.2	I, II	501.3	I, II	501.4	I, II
Low Temp.	502.1	I	502.2	I, II	502.3	I, II	502.4	I, II
Temp. Shock	503.1	I	503.2	I	503.3	I	503.4	I
Solar Radiation	505.1	I	505.2	I	505.3	I	505.4	I
Rain/Blown Rain	506.1	I, II	506.2	II	506.3	I, II	506.4	I, II
Humidity	507.1	II	507.2	II, III	507.3	II, III		
Salt Fog	509.1	I	509.2	I	509.3	I		
Dust and Sand	510.1	I	510.2	I	510.3	I	510.4	I
Vibration	514.2	VII, VIII	514.3	I(8)	514.4	I(8)	514.5	I(24)
Shock	516.2	I, II, V	516.3	I, IV, VI	516.4	I, IV, VI	516.5	I, IV, VI

M=Method P=Procedure

ENCRYPTION OPTIONS

Supported Encryption Algorithms	DES, DES-OFB
Encryption Algorithm Capacity	4 Maximum
Encryption Keys/Radio	16 Common Key Reference (CKR) 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 360 msec
Encryption Keying	External Key Loader, OTAR
Synchronization	CFB – Cipher Feedback OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Erasure	Keyboard Command
Code Key Initialization	Internal pseudorandom generator

FACTORY MUTUAL APPROVALS

Intrinsically Safe		
Class I	Division 1 An area where there is or could be an explosive atmosphere most of the time in normal conditions.	C Ethylene D Propane and Methane E Conductive metal F Carbonaceous material coal, coke dust G Grain dust and flour
	Class II	
Class III	Division 1 Location in which easily ignitable fibers or materials producing combustible flyings are handled, manufactured, or used.	Ignitable fibers or flyings
	Division 2 An area where an explosive atmosphere exists only as a result of a fault.	A Acetylene B Hydrogen C Ethylene D Propane and Methane



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51SL Series

Portable Radio

EFJohnson®

Price List



APCO Project 25/SMARTNET®/SMARTZONE®

How to Make a Model String - Select Portable and Options, Enter Numbers in these Boxes.

1	Portable 4-Digit Model #	3	Battery #	5	Protocol #	7	Enter up to Four 2-Digit Software Control Options in Numerical Order. List only requested options.			
	<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		2	Antenna #	4	Housing #	6	System Options #			
			<input type="text"/>		<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Step 1 Select One Portable Base Model, Either Standard or Intrinsically Safe Model

Base model includes radio, 512 channels/talkgroups, battery, and standard belt clip.



Standard Model			List Price
5212	VHF, 5W, 136-174 MHz, Model II		\$ 1,325
5213	VHF, 5W, 136-174 MHz, Model III		1,500
5222	UHF, 4W, 380-470 MHz, Model II		1,325
5223	UHF, 4W, 380-470 MHz, Model III		1,500
5242 *	UHF, 4W, 450-512 MHz, Model II		1,325
5243 *	UHF, 4W, 450-512 MHz, Model II		1,500
5272	700/800 MHz, 762-806 MHz, 2.5W, and 806-870 MHz, 3W, Model II		1,325
5273	700/800 MHz, 762-806 MHz, 2.5W, and 806-870 MHz, 3W, Model III		1,500
Intrinsically Safe Model			List Price
5216	VHF, 5W, 136-174 MHz, Model II		\$ 1,375
5217	VHF, 5W, 136-174 MHz, Model III		1,550
5226	UHF, 4W, 380-470 MHz, Model II		1,375
5227	UHF, 4W, 380-470 MHz, Model III		1,550
5246 *	UHF, 4W, 450-512 MHz, Model II		1,375
5247 *	UHF, 4W, 450-512 MHz, Model III		1,550
5276	700/800 MHz, 762-806 MHz, 2.5W, and 806-870 MHz, 3W, Model II		1,375
5277	700/800 MHz, 762-806 MHz, 2.5W, and 806-870 MHz, 3W, Model III		1,550

Step 2 Select an Antenna

EFJohnson®

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Order Entry 1.800.328.3911
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Effective June 6, 2005
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1	VHF – 136-151 MHz	N/C
2	VHF – 151-162 MHz	N/C
3	VHF – 162-174 MHz	N/C
4	UHF – 380-520 MHz	N/C
6	VHF – 136-174 (VHF Wideband)	\$ 15
8	700/800 MHz, 1/2 Wave	N/C
9	700/800 MHz, 1/4 Wave	N/C

*Check for availability before ordering.

Enter Portable Radio Model Price	\$	<input type="text"/>
Antenna Price	\$	<input type="text"/>
Radio Model #	<input type="text"/>	
Antenna	<input type="text"/>	
Total of Portable Radio Model Price and Antenna Price in Box A	\$	<input type="text"/>

Step 3 Select a Battery

		List Price
1	Extra-High Capacity Battery Pack, NiMH	N/C
2	Alkaline Battery Clamshell	\$ 150
6	Extra-High Capacity Battery Pack, NiMH, I/S	N/C

Step 4 Housing

0	Black Housing	N/C
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Step 5 Select the Protocol

1	Analog FM	N/C
2	Project 25 Digital CAI (Common Air Interface, Includes Protocol Option 1)	\$ 350

Step 6 Select the System Option

0	Conventional System	\$ 550
1	SMARTNET® II Trunking (Includes System Option 0)	600
2	SmartZone® Trunking (Includes System Option 0 and 1)	750
3	SmartZone Trunking and Project 25 Trunking (Includes System Option 0, 1 and 2)	975
5	Project 25 Only Trunking (Includes System Option 0)	775

Step 7 Select Software Control Options, May Select up to Four Options

06	DES/ DES-OFB Encryption	\$ 550
11	Project 25 OTAR Conventional and Trunking	750
13	Project 25 Data Conventional **	TBD
14	Project 25 Data Trunking** (Requires System Option 3 or 4)	TBD
50	Zone Fail-Site Lock (Requires System Option 2)	150
60	MDC1200 Compatibility	50
65	Man-Down Switch Enable	40

Step 8 Enter Prices, then Total

51SL Series Portable Radio Model and Antenna
Price from Box A (Previous Page) \$ _____

Battery Price \$ _____

Protocol Price \$ _____

System Option Price \$ _____

Total Price of all Software Control Options (Up to 4) \$ _____

TOTAL PRICE \$

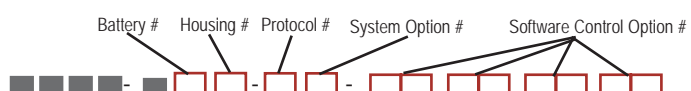
** Future Option



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Quantity:		Model	
Discount %:	20.0%	String	
List Price each:			
Discount Price each:			
Total Discount Price:			

MODEL (Includes 3 Year Warranty and Programming)

- \$175 ☐ DTMF (Model III)
- \$50 ☐ Intrinsically Safe
- \$1,429 ☐ VHF, 5W, 136-174 MHz
- ☐ UHF-LO, 4W, 380-470 MHz
- ☐ UHF-HI, 4W, 450-512 MHz
- ☐ 700/800 MHz, 2.5W @ 762-806 MHz, 3W @ 806-870 MHz

ANTENNA

- \$0 ☐ VHF: 136-151 MHz
- \$0 ☐ VHF: 151-162 MHz
- \$0 ☐ VHF: 162-174 MHz
- \$15 ☐ VHF: 136-174 MHz (wideband)
- \$0 ☐ UHF: 380-520 MHz
- \$0 ☐ 700/800 MHz: 1/2 Wave
- \$0 ☐ 700/800 MHz: 1/4 Wave

BATTERY

- \$0 ☐ Extra-High Capacity Battery Pack, NiMH
- \$150 ☐ Alkaline Battery Clamshell
- \$0 ☐ Extra-High Capacity Battery Pack, NiMH, I/S

HOUSING

- \$0 ☒ Black

PROTOCOL

- \$0 ☐ Analog FM
- \$350 ☐ Project 25 Digital CAI (Common Air Interface, includes Analog FM Protocol)

SYSTEM

- \$550 ☐ Conventional System
- \$600 ☐ SMARTNET II Trunking (includes Conventional System)
- \$750 ☐ SmartZone Trunking (includes Conventional and SMARTNET II)
- \$975 ☐ SmartZone and P25 Trunking (includes Conventional, SMARTNET II, and SmartZone)
- \$775 ☐ Project 25 Only Trunking (includes Conventional)

SOFTWARE CONTROL (may select up to 4 options)

- \$550 ☐ DES/DES-OFB Encryption
- \$750 ☐ Project 25 OTAR Conventional and Trunking
- \$0 ☐ Project 25 Data Conventional (Not Available at this time; Future)
- \$0 ☐ Project 25 Data Trunking (Not Available at this time; Future)
- \$150 ☐ Zone Fail-Site Lock (requires a SmartZone System)
- \$50 ☐ MDC1200 Compatibility

